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## NATTERER'S BAT, *VESPERTILIO NATTERERI*.

BY THE EDITOR.

### PLATE III.

TWENTY years ago, when living a good deal in West Sussex, we often saw this Bat flying about the oak trees on the outskirts of the woods. It appeared earlier in the day than the other local species, even making its appearance before sunset. It was by no means shy, but allowed so near an approach that, as we stood motionless against the tree trunk around which it was feeding, it would pass within a few feet, and enable us to identify the species without killing it. In Middlesex, also, when residing at Kingsbury, we had many opportunities of seeing and handling Natterer's Bat, specimens of which were procured at Hampstead, the Hale, Edgeware, and Stanmore. Subsequently, on noting its occurrence in many other parts of England, Wales, and Ireland, we came to the conclusion that it cannot be so rare a species in the British Islands as is generally supposed.

The name "Reddish-grey Bat," bestowed upon it by Bell ("British Quadrupeds," 2nd ed., 1874, p. 54), has always struck us as not very appropriate, the dorsal surface of the specimens obtained by us being very pale yellowish grey, and the under parts nearly white. Its colour and size, as well as the length of the ears (about as long as the head), made it easy to distinguish it on the wing from either the Pipistrelle or the Long-eared Bat,



the only two species in the localities where we observed it with which it could be confounded.

Its flight when feeding was by no means rapid, though on leaving one tree for another at a little distance it flew much faster, though never so rapidly as the Pipistrelle or high-flying Noctule.

So far as could be ascertained without actual examination of the prey captured, its food appeared to consist principally of small Diptera and Micro-lepidoptera, which it captured not only on the wing, but snatched off the leaves on the outside branches of the trees with great dexterity. Just as a dog will "bolt" a rabbit and catch it before it has gone many yards, so this Bat would disturb a small moth and seize it within a few inches of the leaf or twig on which it had been resting. An entry in an old note-book reminds us of a particular day in autumn (Aug. 24) when we watched one of these Bats, at 3 p.m., flying round an almost leafless oak, much slower than a Pipistrelle, and at a lower elevation. On another occasion we watched one for some time hawking for flies round an old pollard ash, quite early in the afternoon, while the sun was still shining. Its dexterity was remarkable, and as we called to mind the well-known lines in Collins's "Ode to Evening,"—

"Now air is hush'd, save where the weak-eyed Bat  
With short shrill shriek flits by on leathern wing,"

we were forced to the conclusion that the poet had hardly done justice to its powers of vision. The "short shrill shriek" admirably describes its vocal effort, and no better verb than "flit" could be found to describe its movements on the wing; but for "weak-eyed" we should prefer "keen-eyed," as depicting more truthfully its really marvellous powers of sight. Indeed, were it not gifted with excellent vision it would scarcely be able to get a living by the chase of small and active insects on the wing.

Its usual abode by day is preferably the hole of a tree, often in a wood, being what may be termed a woodland species;\* but it has also been taken from the rafters of a cottage (Bell's edition of White's 'Selborne,' i. p. 34); from a hole in a bridge, four feet above the water's edge (Zool. 1853, p. 4012); from a hole in a

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\* Bats have their peculiar haunts, like birds; the Pipistrelle haunts the neighbourhood of houses, and the Barbastelle loves water.

wall (A. Newton, Zool. 1853, p. 3804), and from the roof of a church (Bell, Brit. Quad., 2nd ed., p. 55).

Like other Bats it is gregarious, and has occasionally been found in large colonies. A notable instance of this is mentioned in 'The Zoologist' for 1853 (p. 4012), where Dr. Kinahan records the fact of 27, 35, and 53 having been counted while issuing from one and the same hole in the abutment of Tankards-town Bridge, which crosses the River Barrow at Levitstown, on the confines of Kildare and Queen's County.

The almost entire disappearance of Bats during the winter, unless tempted forth by unusually mild or warm weather, has led to the belief in some quarters that they migrate like birds, though it is certain that their absence in most cases is to be accounted for by their hibernation. But something very like migration has been observed, if not actually proved. It has been ascertained by Blasius that Bats not merely seek for a change of locality, but that they do so with such regularity that it becomes, in his opinion, a "migration." Bell, apparently loth to accept this view, remarks (*op. cit.*, p. 9), "May we not suppose that the migration of Bats observed by Professor Blasius was the mere unconscious appearance, night after night, of these creatures at a spot somewhat removed from that of the previous night, thus following the twilight, rather than what may be properly termed a migration?" There is other evidence, however, besides that of Blasius, to which he has not referred.

Spallanzani discovered that in Italy a great many Bats, especially *Vespertilio murinus*, migrate at the approach of cold weather. At Pavia there are no grottoes nor caverns to which they can retire, and not a single *Vespertilio* could be found in winter, though no pains were spared in searching for them. The latest date at which he observed Bats flying at Pavia was Nov. 2, when the thermometer was at 55°. Another species, *V. equinus*, was seen at Modena on Nov. 4th. None were then observed again until March, when the temperature was 45°, and then *V. equinus* had not reappeared, the weather being too cold for it; for some species are quite torpid at a temperature which others are able to endure without their muscular energy being diminished.\*

\* Spallanzani, 'Rapports de l'air avec les êtres organisés,' ii. p. 125.

In Sussex Mr. William Jeffery has observed a great increase in the number of Noctules in August, and supposes that they are moving southwards then.

Mr. A. J. Clark-Kennedy, on May 23rd, 1874, about 5 p.m., saw a flight of twenty-seven large Bats, flying steadily in a north-easterly direction, at Little Glenham, Suffolk.\*

That Bats are able to find their way back to their old haunts, just as Swallows and Martins have been proved to do, has been shown by Mr. Gyles, of Kilmurry House, Waterford, who by way of experiment captured several Pipistrelles alive, on an island in the River Suir, and, carrying them to a distance, liberated them separately on the mainland. Each of them, after making one or two circuits in the air, went off in a direct line for its home, notwithstanding there was a bright sun shining at the time, and a strong wind blowing against them.†

On these points (migration, and homing instinct in Bats) there is room for much interesting experiment, and it would not be difficult to catch and mark Bats, just as Swallows and Martins have been marked, by fastening lightly round one of the hind feet a thin bit of silver wire, before restoring it to liberty. On discovering the haunt of a colony a number might be caught and marked, and carried some miles away. It would be easy to revisit the place and ascertain whether any of those marked had returned ; and under favourable circumstances this might be done without disturbing them much, for the silver wire being fastened to the hind feet, it would be readily seen, as the Bats hang suspended head downwards.

Another point of interest, upon which it would be desirable to have more information, is the precise nature of their food. We know that, in this country at least, Bats are exclusively insectivorous. But on what particular insects do they chiefly prey ? With the Noctule the little hairy cockchaffer, *Amphimalla solstitialis*, is said to be a favourite food. Mr. D'Urban has observed that in Devonshire the Pipistrelle comes out in March, about the time the spring *Noctuidæ* appear at the catkins of the sallows, and that it picks these moths off the blossoms as it flies past. Mr. Bond has seen the Serotine taking moths off

\* 'Zoologist,' 1874, p. 4075.

† Note on "Homing Instinct in Bats," 'Zoologist,' 1883, p. 173.

the blossoms of the blackthorn. When the sallows are in bloom the Long-eared Bat catches several species of *Tæniocampa* which feed on the blossoms, and Doubleday watched this species picking moths off the flowers in his garden. Couch also has seen it take a fly off a leaf without alighting.\* When dealing with the larger Lepidoptera they bite off the wings close to the body and drop them, eating only the body; and the haunt of a Bat may sometimes be discovered by the quantity of insect wings lying just below.

The present distribution of Natterer's Bat in the British Islands cannot be stated in a few words. So much attention has been bestowed of late years on the *Chiroptera* that even in the second edition of Bell's standard work (1874) the records of the occurrence of this species are very incomplete. In our annotated copy of that work, without much trouble, we have been able to add some thirty additional localities for *V. Nattereri* to those mentioned in the text, and there are doubtless others which have escaped notice. Briefly speaking, it may be said that Natterer's Bat is found in England and Wales from Cornwall to Durham, and from Norfolk in the east to Merionethshire in the west,—a pretty wide distribution. In a few counties, it is true, it has hitherto escaped observation, but its discovery in these is probably only a question of time, now that such close attention is paid to the fauna of particular areas, although we should not expect to hear of it in the mountainous parts of England and Wales. Its occurrence in the following counties has been vouched for by good observers:—

CORNWALL.—At Looe, Sept., 1852 (Couch, 'Zoologist,' 1853, p. 3937†; 'Cornish Fauna,' 2nd ed., 1878, p. 2).

DEVON.—No mention is made of this Bat in any of the Devonshire Catalogues by Turton and Kingston, Bellamy (1839), Brooking Rowe (1863), D'Urban (1875), or Parfitt (1877). In our annotated copy of Bell's work, however, we find a memorandum of its having been noted at Torquay by Mr. Gurney, though he has no recollection of it.

DORSET.—Ensbury, Borrer (Zool. 1874, p. 4127).

\* 'Zoologist,' 1843, p. 343.

† His observations on Bats (*l. c.*), extending over seven pages, are worthy of attention.

**HANTS.**—New Forest, Brockenhurst (Bond), Hamble Church, near Southampton (Kelsall), and Selborne (Bell, ed. White's 'Selborne,' i. p. 34).

**ISLE OF WIGHT.**—Bonchurch (Bury, More, Bond, Borrer), Ventnor (Hadfield).

**SUSSEX.**—Cowfold, Henfield, St. Leonard's Forest (Borrer), Balcombe, Three Bridges (Bond), Poynings (Oxford Museum), Midhurst, Nigh Woods, Rogate, West Grinstead, and Hellings (Harting).

**KENT.**—Chislehurst (Bell), Tudely near Tunbridge (Hadfield, Zool. 1857, p. 5664).

**ESSEX.**—Epping (Doubleday, Zool. 1843, p. 6), Colchester (Yarrell, Jenyns). Said to be common around Colchester in houses and buildings in summer; in cellars and caverns under the Castle in winter; sometimes in wells clinging to the brickwork (Laver, 'Trans. Essex Field Club,' vol. ii. p. 160).

**MIDDLESEX.**—Hampstead (Bond), The Hale, Edgeware, and Stanmore (Harting). In London (J. E. Gray, Zool. Journ. 1825, p. 108). Some years ago we received one which had flown into a house in Thayer Street, Manchester Square; others procured in the neighbourhood of London are preserved in the British Museum.

**BERKS.**—Godstowe (*fide* Kelsall, more information wanted).

**OXFORD.**—Charlton-on-Otmoor, "not uncommon" (O. V. Aplin), Begbroke Church (Kelsall).

**CAMBRIDGE.**—Swaffham Prior (Jenyns, Man. Brit. Vert. An.).

**NORTHAMPTON.**—Lilford Hall, Oundle; Achurch, Pilton Church (Lord Lilford, Zool. 1887, p. 64).

**SUFFOLK.**—Elveden, near Thetford (Newton, Zool. 1853, p. 3804), Blaxhall (Rope).

**NORFOLK.**—Norwich (Bell), Framingham Pigot, near Norwich Stevenson, Zool. 1871, p. 2752; Southwell, Trans. Norf. and Norw. Nat. Soc., vol. i. p. 73, and vol. iii. p. 667). "By no means rare in Norfolk, frequenting houses and outbuildings" (*l. c.*). Near Sparham (Norgate).

**LEICESTER.**—Gumley (Matthews, Zool. 1885, p. 216).

**WARWICK.**—Arrow, near Alcester (Tomes; *fide* Bell, *op. cit.*).

**WORCESTER.**—Dripshall, Upton-on-Severn (Jenkinson, Zool. 1857, pp. 5590, 5664).

STAFFORD.—Near Burton (Garner, 'Nat. Hist. Staffordshire,' p. 244).

SHROPSHIRE.—At Eyton, once (Eyton, Ann. Nat. Hist. 1840, p. 396).

MERIONETHSHIRE.—Harlech Castle, July 1835 (Thompson, P. Z. S. 1837, p. 52; Nat. Hist. Ireland, vol. iv. p. 2; and Kelsall, Zool. 1887, p. 346).

LINCOLNSHIRE.—Rare, once near Grainsby, in July, 1876 (Caton-Haigh, Zool. 1887, p. 143).

YORKSHIRE.—Oakwell Wood, Birstal (Denny, Ann. Mag. Nat. Hist. 1840, p. 385; Clarke and Roebuck, Handb. York. Vert., p. 4). Harefield Wood, near Pateley Bridge (Zool. 1884, p. 173).

DURHAM.—On a tree in Hoffal Wood (Meynell and Perkins, Cat. Mamm. Northumb. and Durham, p. 163),

So far as we are aware Natterer's Bat has not been met with in the three northernmost counties of England, namely, Northumberland, Cumberland, and Westmoreland; and evidence of its occurrence is wanting for the following counties, namely, Lancashire, Cheshire, Derby, Nottingham, Bedford, Huntingdon, Rutland, Herts, Bucks, Surrey, Hereford, Gloucester, Somerset, and Wilts; though it is very likely we may have overlooked records for some of these counties.

As regards Scotland this Bat is said to have been found near Edinburgh (*cf.* 'Proc. Glasgow Nat. Hist. Soc.', vol. iv.); and a specimen procured at Inverary, Argyllshire, was presented to the British Museum by his Grace the Duke of Argyll.

In Ireland it is reported to have been obtained near Enniskerry, Co. Wicklow (Mangan, 'Report Nat. Hist. Soc. Dublin,' 1844, p. 18), and near Dublin (McCoy, Ann. and Mag. Nat. Hist., vol. xv., first series, 1845, p. 270; Leith Adams, Proc. Roy. Dublin Soc., 1878; and Barrington, 'Guide to Co. Dublin, its Geology, Fauna, &c.', 1878, p. 90). In the summer of 1853 nine full-grown specimens were taken by Dr. Kinahan and Mr. F. Haughton, from a hole in Tankardstown Bridge, which crosses the River Barrow near Levitstown, on the borders of Kildare\* and Queen's County (Zool. 1853, pp. 4012, 4013).

\* As regards Kildare see 'Dublin, Nat. Hist. Review,' vol. vi., 1859.

In April, 1883, Mr. J. F. Darling captured a specimen of this Bat in the woods of Castlefreke, Co. Cork, the seat of Lord Carbury (Zool. 1883, p. 294). When first observed it was flying about in the sunshine, at 2 o'clock in the afternoon, and being observed to catch some prey, with which it alighted on a tree trunk, it was seen to be munching the body of a large moth, which it pushed into its mouth with its thumbs.

Finally, there is a specimen of Natterer's Bat in the British Museum (Natural History) which was procured in the Co. Longford, and presented by Mr. G. E. Dobson, the author of the excellent 'Catalogue of *Chiroptera* in the British Museum.' As the dimensions and dentition of this Bat may be found described in this Catalogue, as well as in Bell's work above quoted, it seems unnecessary here to repeat the description. Attention, however, may be particularly directed to the large size of the ear (about as long as the head), and to the long, narrow, lanceolate tragus, which is about two-thirds the length of the auricle.

Possibly some of our readers may be able to name localities for this Bat in some of the counties above mentioned, respecting which at the present time we are without information.

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#### THE PRODUCTION OF COLOUR IN BIRDS' EGGS.

By ARTHUR H. MACPHERSON, B.A.

THE last number of 'The Zoologist' contains a very interesting paper by Mr. A. H. S. Lucas, suggesting that the influence of the surroundings on the parent bird during the formation of the shell affects the colour of the egg.

This "mental receptivity" is considered as a cause of variation, and the hypothesis ingeniously applied to many cases. But it seems to me that many difficulties arise. In the case of birds whose eggs vary very much, it is nearly as hard to explain the variations by the hypothesis of Mr. Lucas as by "protective" or "sexual selection."

Take the stock instance of the Guillemot. We have here infinite variations in the colour and markings of the eggs. It is supposed that the same bird lays similar eggs each year; but it is, apparently, not known for certain whether the faculty of laying an egg of a given colour is hereditary, nor to what extent (if any)

the eggs of (say) a blue-egged Guillemot are affected by mating with one that comes of (say) a brown-egged family.

At any rate Mr. Lucas says (p. 209), "Individuals at the present day are influenced in part by the surroundings, but mainly restricted by the tribal habits of generations." So the hypothesis in question assumes that the faculty of laying eggs of a given colour is hereditary, but capable of being varied to a certain extent in each case by the action of external objects on the brain of the parent bird. How are we to reconcile the extraordinary variety of colour in the eggs of this bird with the assumption that the colour is inherited by the race through many generations? Guillemots breed in large colonies. Surely in the course of generations, if the coloration of the eggs were determined mainly by a principle of heredity, the eggs in any given colony would gradually assume a more or less definite type, as in the case of other birds living together and interbreeding. It is evident that no one of the many varieties referred to is sufficiently superior to the others to have been "seized on" by Nature and transmitted by the principle of heredity.

"Mental receptivity," as stated, may explain slight variations in eggs; but if applied to more marked variations, we must in these cases conclude that the effect of the surroundings on the individual bird is sufficiently strong to counteract any variations which Nature might have intended it to transmit; in other words, a bird whose eggs at the present day are found to vary considerably is influenced not merely in part, but mainly, by its surroundings.

We are to suppose that hen Guillemot No. 1, about twelve hours before laying each egg, is so much influenced by the colour of the sea that she lays a greenish or bluish egg; No. 2 is so affected by the appearance of sea-weed that her egg is covered with brown, green, or black markings, resembling sea-weed; and so on. And here again many questions naturally arise. For instance, what effect has the colour of the first egg laid, or rather the causes which produced that colour, on eggs subsequently laid? If none, how are we to support the assumption that each bird always lays similar eggs? Is her nature such that she is always impressed by the same objects?

When we come to birds which lay bright blue eggs, as the Hedgesparrow, it is impossible to believe that the colour is

caused solely by a continuous contemplation of the blue vault of heaven.

In the case of the Cuckoo, it seems to me that matters are not much clearer than they were before. No suggestion with regard to the colour of the eggs of this bird has yet been made which is not full of difficulties.

Dr. Romanes has remarked:—"We cannot imagine the Cuckoo to be able consciously to colour her egg during its formation in order to imitate the eggs among which she is about to lay it; nor can we suppose that, having laid an egg and observed its colouring, she then carries it to the nest of the bird whose eggs it most resembles." Still the latter supposition is perhaps easier to believe than most of the suggestions, especially when we consider how very little is known as to birds and colour.\* Any experiments in this direction would be sure to lead to interesting results, for birds are æsthetically much more highly developed than mammals.

Then there is Prof. Newton's suggestion ('Animal Intelligence,' p. 307), that "there is very reasonable probability of each Cuckoo most commonly placing her eggs in the nest of the same bird, and of this habit being transmitted to her offspring."

This view seems to require—

- (1) A Cuckoo to have a favourite bird in whose nest to lay her eggs;
- (2) An egg resembling the egg of that bird; and
- (3) Both these characteristics to be hereditary.

And, apart from the criticisms put forward by Dr. Romanes on this hypothesis ('Animal Intelligence,' p. 308), would not this state of affairs, if true, result in considerably greater variations than are usually found among Cuckoos? Except one well recognized variety of the young bird, Cuckoos seem to vary very little. Would not several generations of Cuckoos all brought up by (say) Hedgesparrows, and fed to a great extent on Hedgesparrows' food, result in a well-marked variety, even though the difference between the food of a Hedgesparrow and (say) a Shrike were not sufficient to cause a strong difference to show itself

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\* 'Animal Intelligence,' p. 307. This suggestion was made by Mr. Harting in an article on the Cuckoo published in 'Science Gossip' for May, 1870, and subsequently reprinted in 'Sketches of Bird Life,' 1883.

immediately? We know that a Bullfinch fed on hemp-seed and a Canary on Cayenne pepper become black and orange respectively. Mr. Wallace, too, has given (I think in 'Tropical Nature') a remarkable instance of change of colour, caused by food, in a Brazilian parrot.\* Not much is known on the subject, still I cannot help thinking that in this case of the Cuckoo we should soon have well-marked varieties; unless we are to believe that the impossibility of always finding the desired nest, and the mating with birds brought up by a different species, would counteract this tendency.

Nor do I think that Mr. Lucas helps us much. According to his view the Cuckoo determines beforehand what nest to lay its egg in, looks at the eggs therein contained, and has such a vivid impression of their appearance during the period of formation of the shell, that the egg which she eventually lays resembles those in the nest.

The Cuckoo has so often been discovered carrying its egg in its bill, apparently searching for a nest in which to deposit it, that evidence would first be required to show that the bird had previously examined the eggs of the nest in which she intended to lay her own.

Prof. Newton, in Yarrell's 'British Birds' (ed. 4., vol. ii., p. 403), says that the supposition that the colour of the egg can "in any mysterious way be affected by the action of external objects on her perceptive faculties," is "wholly unreasonable." And certainly Mr. Lucas's view does seem to be somewhat far-fetched.

If we take the latest List of British Birds, and look through it from the Missel Thrush onwards, besides the two obvious generalisations with regard to the eggs and nests (*viz.*, that birds which build in holes are brightly coloured, and that eggs laid in holes are colourless), it is remarkable that the brightly coloured eggs are laid by birds at the top of the list; the plain coloured eggs by those at the end of the list. The brightness of the colour of the egg may be roughly taken to indicate the development of the æsthetic faculties of the bird, as shown by singing and the nest-building instinct.

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\* This statement as to *Chrysotis festiva* is said to need corroboration. *Vide Semper's 'Animal Life,' p. 67.*

Are we to explain this by saying that the lower forms of birds, appreciating only the simple colours of such things as bare ground and sea, lay eggs whose colour is the result of the effect of these things on the parent's brain ; while the higher forms, capable of being impressed with more brilliant and complicated surroundings, on account of their higher æsthetic faculties, therefore lay eggs more beautifully coloured and marked ? And if so, is it all unconscious ? It is almost impossible to ascribe the proceedings of the Cuckoo, as suggested by Mr. Lucas, to a course of purely unconscious actions. But if there is consciousness about it, we must ascribe the varieties in the eggs of such birds as the Guillemot to the variety of objects which attract the attention of different Guillemots.

Is one egg streaked because the bird which laid it was more influenced by the contemplation of a piece of dry sea-weed than by any other neighbouring object ? Once admit an element of consciousness, and there is no knowing where to stop. But without following the hypothesis of Mr. Lucas to its results, let us look at the root of the whole matter.

Do external objects around the hen bird really affect the colour of her eggs ?

Let us apply the theory, as Mr. Lucas asks us, to "birds which breed easily in confinement."

The Common Rock Dove is a natural instance. What can be more different than the surroundings of these three—*Columba livia* nesting in a cave in a rocky cliff by the sea ; a semi-wild Pigeon nesting on a pillar of St. Paul's ; and a pair of Fantails in an open wicker cage in a ladies' drawing room ? Yet their eggs are all alike—quite white.

Take the Canary. It is stated in 'The Gentleman's Recreation,' published in 1677, that Canaries were at that time regularly imported from Germany. If so, surely the egg in the course of over two hundred years might be expected to have altered in appearance considerably. Ought it not to be brown, from the colour of the interior of its cage ? or reddish, from the sand in its tray ? But such is not the case.

I would not, then, go so far as to say that external objects have no influence upon the colouring of the eggs laid by a bird, for, undoubtedly, mental and nervous conditions frequently produce chemical bodily changes ; but at present there

seems very little on which to base such assertion. And if the influence exist at all, it can, at the most, only form one of many causes which combine to produce variations such as those which Mr. Lucas has tried to explain.

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## SEALS AND SEALERS.

BY THOMAS SOUTHWELL, F.Z.S.

IT is very difficult, when writing for a purpose, to avoid extremes, and, when it happens that the purpose which inspires the pen is one of kindly feeling for a class of animals so harmless and beautiful as the Seals, it is hardly a matter of surprise that a tender-hearted lady should express somewhat strongly the pity she feels so acutely. Every lover of Nature can but sympathise with and admire the sentiments which have prompted Lady Blake to denounce what she so feelingly deplores ; but when, in her recent article in the 'Nineteenth Century,' she stigmatises as "savages" a class of men employed in an arduous and dangerous, but legitimate industry, such as that followed by the St. John's Seal-hunters, she certainly does these bread-winners an injustice. By her own showing the employment is one of extreme peril and privation, from ice, storm, frost, and exposure, and if the remuneration last season, in the case of the most successful voyage ever known, that of the 'Neptune,' did not exceed £13 15s. per man, poor indeed must be the general return for so great an expenditure of energy and endurance.

As well might Lady Blake stigmatise as savages the large number of respectable men who gain their daily bread by the occupation of slaughtermen as the poor sealers of St. John's, who, however revolting their calling may be, are equally inoffensive members of the community, and—not to justify one cruelty by another—the misery inflicted in the daily slaughter of calves and pigs must far exceed that inflicted every season on the Newfoundland ice-fields. The writer does not know personally a single St. John's sealer, but he does know several who attend the Greenland sealing, and he would be sorry to regard men as "savages" who have, on their own petition, obtained enactments which have rendered impossible, in the present day, what were undoubtedly the most cruel features in the Greenland sealing as formerly prosecuted.

One of these "savages," well known to your readers as a contributor to this Journal, was recently decorated by Her Majesty with the Albert medal for distinguished bravery in saving life in the Greenland Seas.

In the main Lady Blake's account of the *modus operandi* of the St. John's sealing is unquestionably correct, and on her article being read over to an old Newfoundland sealer there was very little to which he took exception; but although admitting that such practices as Lady Blake describes as general, were certainly possible, he maintains that they were very exceptional.

Those who attended the International Fisheries Exhibition of 1883 will remember the series of models and drawings of the departure of the sealers from St. John's, their meeting with the Seals, killing, flenching (or "skulping" as it is called by the sealers), and the hauling the skins to the ship: these were stated, by those conversant with all the operations, to convey an excellent idea of what really takes place when the vessel has got among the Seals; and how, under these circumstances, such scenes as are depicted by Prof. Jukes could occur, it is impossible to imagine, for it is as certain that no captain would encumber the decks of his vessel with three hundred dead and dying Seals as that the men would never incur the labour of dragging them to the ship: Prof. Jukes describes what he saw, and therefore it must have happened, but it is difficult to account for. The first thing after killing all the Seals within his reach, which the hunter does, is to divest them of their skins and blubber; this is easily effected whilst the carcase is warm, but should it become frozen it is a matter of some difficulty: these skins, with the blubber attached, are dragged, perhaps many miles over the ice, to the vessel, and it may readily be imagined the men do not burden themselves with an ounce more than is absolutely necessary. Lady Blake refers to this mode of bringing in the "tows" at p. 520. It is certain therefore that the state of things described by Prof. Jukes does not apply to the present day; and let us trust that in this respect, if in no other, more humanity is displayed by the sealers.

At p. 514 Lady Blake says that not more than six or seven steamers leave St. John's, and that the largest steamers belong to Dundee. As a matter of fact, there were nineteen British steamers at the St. John's sealing last season; four owned from

Dundee, three Greenock, six Liverpool, and six Newfoundland ; the two largest, the 'Esquimaux' (466 tons) and the 'Neptune' (465 tons) belonging to Dundee and Liverpool respectively, and, as no vessel arrived in port earlier than the 8th of April, no second voyage was possible. The total number of Seals taken by these nineteen vessels, including the great catch of 42,242 by the 'Neptune,' was 210,810, a number far short of 500,000.

There are no "floes" on the Newfoundland coast, the ice being broken up by the swell into "pack ice" long before it reaches the coast, and it is on portions of this ice known as "pans" that the young Seals are produced, the old Seal visiting the water not through a hole bitten or scratched through the ice (p. 516),—an impossibility,—but by open spaces between the different pieces forming the pack. The statement that the Harp Seals yield more oil than the "Hoods" is not borne out by actual results. These are small matters apparently ; but if Lady Blake has been misinformed in small matters, we may assume that some of her other information is equally inaccurate.

It is unhappily a fact, as Lady Blake states, that "trading interests" in the present day, whether in "smashed birds" for ladies' hats or in Seal skins, override all other considerations, and in the struggle for existence (only those engaged in it know how severe it is) it must be so ; the Seal-fisheries are an established fact, and the Seal-hunter—however much we may regret his mode of earning his bread—will always remain a Seal-hunter so long as there are Seals to hunt, and his occupation can no more be suppressed than that of the slaughterer of oxen, sheep, and swine. The whole animal world is a complex system of cruelties, in which one form preys upon another as its only means of existence, and man, as the strongest, subjects all creation to his necessities or pleasures. Education may in time ameliorate the sufferings of the lower animals at our hands, and has doubtless done much in that direction already. The whole question resolves itself to this—Are the Seals to be killed at all ? If so, as a matter of absolute necessity, their fate must be a cruel one, and let us by all legitimate means try to alleviate it as much as possible ; but I fear this is not to be accomplished by any system of "putting down," or applying terms of opprobrium to those who are striving to provide for their families as honestly as they can.

ON THE FORMER NESTING IN ENGLAND OF THE  
OSPREY, *PANDION HALIAETUS*.

BY THE REV. H. A. MACPHERSON, M.A.

Did the Osprey breed in England in the olden days? Prof. Newton and Mr. Seeböhm both give the suggestion a decided negative (*cf.* Yarrell, ed. 4, vol. i., p. 33; Seeböhm, B. B., vol. i., p. 57). But I think that, when all the evidence to be adduced is laid before them, they may admit that the Osprey used to nest in the neighbourhood of the English Lakes. The witnesses that I can cite are few, and their statements short; their evidence therefore may be given in full.

Francis Willughby comes first. He says distinctly that the Osprey breeds in Westmoreland. "There is an aery of them in Whinfield Park, Westmoreland, preserved carefully by the Countess of Pembroke" ('Ornithology,' p. 21). This refers to 1676, or a little earlier; but so excellent was the care taken of the birds that, in 1787, Clarke, in his 'Survey of the Lakes,' again recorded the existence of these birds in the old locality. "The Osprey I have seen," says he: "there was a nest, a few years ago, of this bird in Whinfield Park: they seem to be of the Hawk kind, and are about the size and colour of a Magpye; in what manner fish are charmed by them let others tell, for I cannot: I saw one fly into the rock at the Giant's Cave, and on its crossing the river there, the fish sprang to the top and remained six or eight seconds as if intoxicated" ('Survey of the Lakes,' p. 190). Clarke's other notes prove that he was a good sportsman and a keen observer; in all likelihood he had never seen Willughby's statement.

This is, briefly, the case for one eyrie. Two independent witnesses call the birds "Ospreys," and the first states that the birds were thought rare enough to need protection, which explains the preservation of the race.\*

\* Mr. A. G. More stated, in his essay on 'Distribution of Breeding Birds,' that Willughby mentioned a nest of *H. albicilla* in Whinfield Park, but does not seem to have enquired whether that estate included any precipices on which that Eagle could nidificate. As a matter of fact it does *not*, having been originally a wild heath; in Clarke's time it was reclaimed, divided into farms, "the rabbits destroyed, and the deer circumscribed in narrower bounds; by which means the red-deer are much diminished in number" ('Survey of the Lakes,' p. 5). Doubtless the Ospreys of Whinfield Park

My two next witnesses allege, as I understand them, that a pair of Ospreys bred in the Ullswater district under their own observation. The Rev. Wm. Richardson, a good naturalist and accurate withal, in 1793 drew up a sketch of the Zoology of the Ullswater District, for insertion in Hutchinson's 'History of Cumberland.' In this he quotes Berkenhout's description of the *Falco haliæetus*, Osprey, or Fishing Eagle. He adds, "The Osprey, or Fishing Eagle, is frequently seen fishing; he is very bold, and in pursuit of his prey will dart down within forty yards of a man." He then notices the Whinfield Park birds mentioned by Willughby, and shows that he did not understand that author, who speaks of it as "the *Ossifragus*, or Sea Eagle." But if he had been a little more careful, he would have seen that Willughby anglicised the name as the "Osprey," though no doubt wrong in his synonyms; Dr. Heysham erred in like manner. Heysham, then the most accomplished naturalist in the north of England, included in his Catalogue of Cumberland animals the Sea Eagle, *Falco ossifragus*. This he distinguished from both the Golden and White-tailed Eagles; I have no doubt that the Osprey was the bird he meant to indicate.

Richardson has already told us that the Osprey regularly fishes Ullswater. Dr. Heysham says, "I am not certain whether the Sea Eagle breeds at present in Cumberland or not, but a few years ago there used to be an annual nest in the rocks which surround the lake of Ullswater, and the great Trout of that lake has been taken out of its nest, upwards of ten pounds weight; it however frequently visits this country." This statement supports Richardson. But could this "Sea Eagle" be anything else but the Osprey? It was not the Golden Eagle, for that species is not piscivorous; besides, Dr. Heysham expressly distinguishes it from the Golden Eagle. But was the "Sea Eagle" identical with the White-tailed? This is negatived by the details that he furnishes of the latter species. I do not deny that Golden and White-tailed Eagles then existed in our lake area; I am certain

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nested in Scotch firs, as they still do in Sweden. Another fact *inconsistent* with Willughby's birds being White-tailed Eagles is that the Countess "*preserved*" them. Most assuredly no one in the Lake District would preserve *Eagles* at a time when the parish authorities paid head-money for them as destructive vermin.

they did. But I claim that the Osprey was their neighbour. Dr. Heysham distinguishes between the food of the "Sea Eagle" and that of the White-tailed Eagle. Of the former, he says that "its food is principally fish." Of the latter, he says that though it sometimes feeds on fish, yet "it feeds chiefly on land animals," thinking no doubt of young lambs and carrion, which in Scotland constitute the chief food of this Eagle. I hope that the passages cited may clear up the confusion that has existed between the Osprey and the White-tailed Eagle, among our lake hills.

Before I take leave of the subject, allow me to cite one more witness to the former presence of the Osprey in the north of England.

The late Mrs. Howard, of Corby Castle on Eden, about 1831, published privately two volumes of personal Reminiscences. Writing of the banks of Eden (vol. i., p. 97), she says,— "We will descend the Sandwalk to the right of the Tempietto, where observe, among others, the Osprey Eagle tree,—an old oak so called from having been the resort of these voracious birds, which feast on Salmon." This suggests that a third eyrie may possibly have existed long ago in the north of Cumberland. During the last half century a good many Ospreys have doubtless visited our faunal area; but though my records date from 1837, and refer to all parts of our district from the Solway to Furness, the list of Ospreys that have been shot locally is a small one as compared with other parts of England.

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#### NOTES AND QUERIES.

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##### MAMMALIA.

The Noctule and Serotine Bats in Kent.—*Vesperugo noctula* is particularly abundant here; one day in May I counted sixty-eight emerge from a small opening at the upper gable of my house. On May 17th I counted fifty-seven from the same place, and during last week they came out at 8 o'clock in the evening exactly. On the 19th I waited for them from half-past 7, and they came out as usual at 8; I shot three of them as they flew away, and they were all females. This evening, being cloudy and raining, they came out exactly at the same time. They emerge from their dormitory in rapid succession, and in about five minutes they are all

out ; they fly very rapidly, and go away across the marshes that are opposite my house for some considerable distance. The other evening, immediately after their flight, I walked nearly a mile into the marshes to see if I could meet with them, but they were either too high to be observed or had flown further away. As we have been favoured with bright sunshine and fine evenings, it might appear that their distant flight was in consequence, but they have flown away exactly the same the last two evenings that have been dull and wet. I have observed them at the same time of the year on previous years, and have noticed them as late as September. A few years ago (April, 1884) my son cut off the dead branch of an old walnut tree, in the hollow of which we found eight Bats of this species that were all males : it would be very curious if the males hibernate in one place and the females in another. [On this point see Zool. 1874, p. 4194, ED.] These Bats are remarkably uniform in size and appearance ; the three I shot the other evening measured each exactly fourteen inches in expanse of wings. I have noticed also, in my neighbourhood, the Serotine Bat, which rather exceeds in size the former species ; and the Pipistrelle, which is the common small Bat of the neighbourhood,—one of the first to appear in the evening all through the summer months, and even in mild weather in winter. The other Bat often met with is the Long-eared Bat, which is very particular in its choice of evenings for flight, or else comes out later ; it is found in less abundance here than the Pipistrelle, but I have met with it in the wooded parts of Kent in old houses, in such abundance that you might hive a hatful of them as they hung down clustered together from the rafters of the house. I have heard of the Greater Horse-shoe Bat in East Kent, but have not myself met with it.—GEORGE DOWKER; Stourmouth House, Wingham, Kent. [It has been procured at Dartmouth and in Canterbury Cathedral.—ED.]

## BIRDS.

**Peculiarity in the Bill of the Norfolk Plover.**—In 'The Field' of Dec. 4th, 1880, and in his 'Rough Notes on British Birds,' Mr. E. T. Booth has pointed out that the male Norfolk Plover, *Edicnemus crepitans*, when adult, has for a short time in the spring two small knobs at the base of the upper mandible. In May, 1872, he met with two birds thus adorned on the Sussex downs. One of them is stuffed in his collection at Brighton, and a figure of the head is given in 'The Field' (l. c.) and in 'Rough Notes.' No other naturalist seems to have observed this feature in the Norfolk Plover, though what may be called an item of evidence is mentioned in 'The Zoologist' for 1882 (p. 295), which, so far as it goes, is favourable to Mr. Booth's theory. The Norfolk Plover being in the Schedule of protected birds, it has been almost impossible (and very rightly so) to obtain examples, but two having been killed by hawks during the first days of

May the desired opportunity was afforded for examination. Both birds were males, by dissection, and neither of them had any trace of the knobs on the bill, the surface of the upper mandible being quite level along its ridge. On April 25th I examined a live Norfolk Plover, which was supposed to be a male, and it also had no knobs on the bill, but this is not conclusive, for the sex was not definitely ascertained. On the other hand, a knob—as large as in the plate referred to—was distinctly visible in a male which was unfortunately shot near Holt, in Norfolk, on or about the 20th of May last, and was discernible seven days after the bird was stuffed. I was told by Mr. Dack, who mounted it, that when fresh the knob was rounded, but that in a week's time it had become shrivelled, though still quite apparent. This bird, however, had only one knob on the bill, not two as in Mr. Booth's figure, though in the same position, *viz.*, on the ridge of the upper mandible and almost at its base.—J. H. GURNEY, JUN. (Keswick, Norwich).

**Hybrid Waterfowl.**—In the Newcastle Museum there may be seen the skeleton of a hybrid Swan bred between a female Whooper, *Cygnus ferus*, and a male Mute Swan, *C. olor*. In this hybrid, which was reared on Gosforth Lake, in Northumberland, the trachea does not enter the sternum, which nevertheless is slightly hollowed as if to receive it. A year or two ago I was shown in London a supposed hybrid between a Black Swan and a Mute Swan, and a similar hybrid was once reared in County Cork (Proc. Zool. Soc. 1847, p. 97). A hybrid between a Wild Swan and a Goose has been described (Ann. Mag. Nat. Hist. xii, p. 119), but it is doubtful if it was such. My father has a hybrid between an Egyptian Goose and a domestic Duck of the Penguin breed. No birds are more liable to hybridism than Ducks, especially in confinement, and no two kinds interbreed more readily than the Pintail (*Anas acuta*) and Mallard (*A. boschas*). I have had two examples of this cross, and many years ago I believe my father had several of them alive, though unfortunately none of them are now in existence. A rare cross is that between Wild Duck and Sheldrake: of this cross a duck and drake, as we are informed in Hele's 'Notes about Aldeburgh,' were killed near that place in January, 1864, and it was suggested by a writer in 'The Field,' that as this cross had been successfully bred at Saxmundham, the pair may have escaped from there. The only other instances known to me are a drake obtained at Cambridge by Mr. Whitaker, and given by him to Mr. William Borrer, and a brood which, according to Messrs. Harvie-Brown and Buckley ('Fauna of the Outer Hebrides,' p. 102), were bred in North Uist.—J. H. GURNEY, JUN. (Keswick, Norwich).

**Habits of the Cuckoo.**—A pair of Cuckoos have this year chosen a position for their spring operations in my garden well suited for observation. The nest is a Hedgesparrow's, in a bush near a pigsty. There

were two eggs in it when my gardener saw both the Cuckoos invade it. The female turned out one of the eggs, and laid her own in the nest, the male bird sitting in an apple tree close above. The egg was of a deep reddish hue, and therefore not resembling those of its foster parents. The Sparrow afterwards laid two more eggs, and her three nestlings were hatched at the same time as the Cuckoo. Two days afterwards my gardener, who was occupied in the pigsty, heard "a very curious noise," and from his place of concealment saw both the Cuckoos near the nest. The male bird went to the nest, took out the young Sparrows one by one in his beak, flew to a rail close by, and dropped them alive on the ground. When the destroyers of domestic peace had departed, my gardener replaced two of the Sparrows; but the Cuckoos returned almost immediately, and the young ones were again ejected by the same process. Both old Cuckoos continued to show an interest in their progeny for some time, coming early every morning and two or three times each day, and at first actually fed it. Recently, however, their visits have been less frequent. The young bird is now fledged, and more than fills the nest. It is assiduously tended by the Sparrows, who feed it from a twig close above the nest,—and is as savage as a Hawk. Its only beauty, when in its callow state, was the deep orange of the inside of its huge gaping mouth, which will be more than large enough to hold an egg of the size of two from which it sprung, should it in after years wish to entrust its offspring to the care of a Wren. The dark grey (almost black) pencillings on its rich brown feathers make it now a handsome bird. My gardener has been a bird-fancier all his life, and has a practical knowledge of bird-lore which many might envy. He has seen many Cuckoo's eggs, but all of them of a reddish hue; has known them laid in Robin's nests, where they would be less distinguishable from the foster-parent's egg than from a Hedge Sparrow's, but has never seen one like the latter. As I know that there are many theories as to the proceedings of the Cuckoo, some of them based upon insufficient evidence owing to the rare opportunities of actually seeing what occurs, I venture, at the suggestion of our friend the Rev. A. C. Smith, to send you this statement.—HENRY A. OLIVER (Westgreen House, Winchfield).

**Nesting of the Little Grebe.**—With regard to the note on the early nesting of the Little Grebe (p. 231) I find, on referring to the 'Proceedings of the Marlborough College Natural History Society,' that eggs of this species have been frequently taken in that neighbourhood during the first few days of April, and in 1882 were found as early as March 16th. In 1883 I found a nest of this bird on the Kennet, near Marlborough, containing eggs during the first week in April, and remember seeing the same nest, in the middle of the following term (in June, I think), with another clutch of eggs,—evidently a second brood.—ARTHUR H. MACPHERSON.

**Starlings in the City.**—A pair of Starlings, which have lately been seen in the neighbourhood of Christ Church, Spitalfields (situated close to, though really outside, the City boundary), have this year bred in the steeple. I have to-day (May 27th) seen their nest, containing two half-fledged young birds, on a narrow ledge protected by a weather-board, just above the clock. On the same ledge, which is not more than two yards long, there were also three Pigeons' nests,—two containing eggs, and one a young bird.—J. H. KEEN (Church House, Spitalfields).

**Ornithological Notes from Mayo and Sligo.**—Although the Sandwich Terns appeared earlier than usual,—on March 19th,—the cold and wet stormy weather drove them out of the estuary, and until the 24th I did not see them again, when a pair returned to fish in the channels; but the main flock did not make its appearance until some days later. The very stormy and unusually wet weather of this spring had a remarkable effect on our smaller summer visitors, both in retarding their return to their summer haunts and in lessening the numbers that usually visit this locality. Rain or hail fell on eighteen days during the month of March, and on nineteen days in April, while the thermometer seldom rose beyond 50° or 53° in the latter month; and up to the 23rd of May rain has fallen on eighteen days also. I did not hear a Willow Wren until April 29th, and, strange to say, it is the only bird of this species singing in our woods, though in former seasons several could be heard singing all about the place; and another singular fact worth mentioning is, that not a Chiffchaff has visited us this season: we had only one bird last season, though in previous years several used to frequent our woods and plantations of about fifty acres in extent. I saw a Swallow on May 1st, and heard a Whimbrel, *Numenius phæopus*, on the same day. The Corn Crake was heard on the 9th, and the Spotted Flycatcher on the 10th, but not a Whitethroat was heard until the 22nd. The Cuckoo was also late, but being from home I was unable to record the date when first heard. I heard the Common Sandpiper, *Totanus hypoleucus*, on the Bunree River, near Ballina, on the 13th, and saw a pair at the same place on the 20th; and saw Swifts for the first time on May 11th. On April 5th, in order to observe what birds were about the estuary, I went down to Bartragh and the Moyne Channel in my punt, seeing four Wigeon and a Great Northern Diver (in winter plumage) near the island of Baunross; and on the Moyne Sands a flock of twenty-four Sheldrakes and about two hundred Godwits, *Limosa lapponica* (none of them showing any trace of the red summer plumage), a few small lots of eight or ten Curlews, three Grey Plovers, and a few Knots and Turnstones. In the Channel and in Killala Pool I saw five Great Northern Divers; and lying on the point of land running out into the Channel, nearly opposite the old abbey, a herd of fourteen or fifteen large Seals, all of which shuffled into the water before I could get within

150 yards of them, though afterwards many showed their heads above water when watching the punt, even approaching within 50 or 60 yards before their curiosity was satisfied. The great flock of Godwits let me get so close that I knocked over a few with an ordinary shoulder gun, and never saw birds in finer condition, one of those killed weighing fourteen ounces and measuring seventeen inches in length. On April 10th, resting on a sand-bank close to the shore here, I observed twelve Wigeon and a large number of Bar-tailed Godwits; and again, a month later, on May 10th, I saw fifty or sixty of these birds, with a few Knots and Whimbrels, resting on a point of the shore outside one of my fields here.—  
ROBERT WARREN (Moyview, Ballina).

**Crossbill Breeding in Immature Plumage.**—I read with surprise the remarks of your correspondent, Rev. H. A. Macpherson, in the last number of 'The Zoologist' (p. 229), on the Common Crossbill breeding in immature plumage. Surely it ought, now, to be well known to ornithologists that the "yellow dress" of the Crossbill is the mature plumage of the adult male. In the first, immature, plumage the young Crossbills, male and female, are spotted. At the first moult, as is proved by a specimen in the Hancock collection in the Newcastle Museum, the young male takes the red dress, after which, in all succeeding moults, it acquires in the males a greenish yellow or orange-yellow dress. The male bird, therefore, observed at the nest by Mr. Ussher was in a very mature plumage, and certainly not in immature dress. The large collection of stuffed birds and skins of this species in the Newcastle Museum confirm the opinion of all those authors—as Temminck, Selby, J. Hancock, and others—who contend, and have stated, that the Crossbill acquires and wears the red dress at the first moult only, and at all after moults the male plumage assimilates to the colour of the female, but is more yellow and brilliant. Linnæus said of his *Loxia enucleator*, "Junior ruber; senior flavus," and this assumption of the red plumage by the young males before acquiring the yellow dress is probably true of all the species allied to the Common Crossbill."—RICHARD HOWSE (Curator of Newcastle-upon-Tyne Museum).

**Nesting of the Ringed Plover.**—In 'The Zoologist' for 1886 (p. 418) I noticed what I deemed at that time to be an abnormal instance of nesting on the part of our common Ringed Plover, *Charadrius hiaticula*. Having passed a portion of this spring at Wells, Norfolk, I have had frequent opportunities of following up this subject. The main body of the "Stone-runners," as they are locally called, settle down to nesting early in April, and resort in numbers to the long ridges of shingles and gravels near the sea, where, after scratching several holes, they finally select the one in which the eggs are deposited. Many of these nesting-sites, being

below the reach of the highest tides, are sadly pillaged by the men and boys who travel along the beach, and very few of the clutches laid on the shingles below high-water mark are hatched off. Later in the spring, apparently taught by experience, many pairs of Ringed Plovers move inland to the marshes. These marshes, intersected by innumerable tidal creeks, extend over an area of many thousand acres, along the North Norfolk shore: they are composed of deep beds of homogeneous stiff clays, devoid of stones, and containing few fossils, what there are being shells of Mollusca now living in the adjoining seas. The surface of these alluvial mud-beds supports a vegetation composed largely of *Statice limonium* and *Atriplex littoralis* (locally called Crab-grass): in the months of July and August these marshes present a very pleasing appearance, for then the *Statices* are in full bloom, and their blossoms spread—for miles and miles—a shade of delicate lilac over the long low shore. In favoured localities amid these marshes, various species of birds find suitable breeding-places. Redshanks hide their beautiful eggs in tufts of grass; the Lapwing lays hers in the open; whilst the Common Tern, *Sterna fluviatilis*, and the Ringed Plover likewise nest there in considerable numbers. On the 2nd of June, this year, without any very careful search, we found two Redshank's nests, with the full complement of eggs; a Lapwing's nest, with four eggs; seven Common Terns, each with three eggs; and four nests of Ringed Plover, each containing four eggs, in an area not exceeding two acres in extent. These four nests of the Ringed Plover were placed in circular depressions scraped out of the soil, and in each case the eggs rested on a fairly substantial nest made up of the leaves and stems of *Atriplex littoralis*. Not a quarter of a mile off many Ringed Plovers were nesting on the shingle, and there not a trace of grass or plant was used in the construction of their nests, which were merely depressions scraped in the gravel, and, as usual when the eggs are incubated in such situations, fragments of shells were placed under them. Thus within a short distance we find the same species of bird adopting two very distinct methods of nest-making. On thoroughly dry and pervious shingle ridges the birds deposit their eggs on the surface. When the marsh is selected, the eggs are raised from the cold and damp mud by a substantial nest of dry plant stems. The Common Tern adopts a similar course on the sand-hills and shingle; its eggs are laid in bare depressions, sometimes a stalk or two of marram grass being laid in or about the hole. On the marshes a fairly large nest is built, and in those I have examined the stems and dried last year's blossoms of *Statice limonium* were chiefly used in their construction. I am glad to say that I have not seen a better show of birds breeding on Wells marshes for several years than this season, and this is doubtless owing to the fact that the Lord of the Manor, the Earl of Leicester, has ordered egg-gathering to be discontinued in the

area over which he exercises manorial rights: consequently the tenants now rigidly prohibit the taking of eggs from the marshes on any plea whatsoever. I trust that the senseless and indiscriminate plundering of eggs that formerly took place will now be entirely put a stop to.—H. W. FEILDEN (West House, Wells, Norfolk).

**Pellets disgorged by Flycatchers.**—While watching a Spotted Flycatcher, which had built a nest on the outside of one of the corridors of this house, I remarked that the bird was looking somewhat uncomfortable. It sat on an iron balustrade, with its feathers ruffled and its neck extended. In a minute or two it rejected from its mouth a pellet about the size of a horse-bean, and then hopped away apparently much relieved. Upon my picking up the pellet I found it to be composed of a mass of beetles' wings and other entomological curiosities, amongst which the wing-case of a brilliant green beetle was very conspicuous. I have not observed, in the ordinary descriptions of the Flycatcher, any note of this peculiar habit. If it is common there could be no difficulty, as in the case of the Owl, of indicating with some precision the nature of its food, and perhaps of clearing the character of this charming and useful little bird from the aspersions with which vulgar report has sometimes assailed its character,—namely, its destruction of bees and cherries. My object in writing this note is to endeavour to draw from the readers of 'The Zoologist' further information on this subject.—E. W. HARCOURT (Nuneham Park, Abingdon).

[We have long been familiar with the fact that Flycatchers—like Hawks and Owls, Shrikes, Rooks, and other birds—reject the indigestible portions of their food in the shape of "pellets," or, as they are termed by falconers, "castings." Those of the Flycatcher, from their small size, are troublesome to find, unless the bird is closely watched, but a careful analysis of their contents would doubtless lead to some interesting results.—ED.]

**Blackbird and Thrush laying in same Nest.**—On April 20th a Thrush's nest was found by the gardener at Westbrook, Godalming, in which were two Thrush's and three Blackbird's eggs. The hen Thrush was on the nest; this was built in an Acacia tree, and was about ten feet from the ground. I may add that there is no likelihood of its having been tampered with.—HENRY BENSON (Farncombe Rectory, Godalming).

**Variety of Eggs of Grey Wagtail.**—I fear your editorial remarks about my Grey Wagtail's eggs (p. 231) will cause your readers to be sceptical about them. I omitted to state that I saw the old birds in order that my note should not take up too much space. I am well acquainted with this bird, which breeds regularly in several localities about here. I discovered the nest by seeing both old birds fly to it; it was then empty.

On that day week I visited the nest again, on which the hen bird sat until I nearly touched her, and both cock and hen then flew round me while I was taking the eggs. These are as I described them, all of them very similar; the shells smooth and well formed, and do not show any signs of the bird being in bad health when she laid them. In the last (fourth) edition of Yarrell's 'British Birds' the ordinary yellow variety is the only one mentioned.—E. W. H. BLAGG (Cheadle, Staffordshire).

**Sand Grouse in Yorkshire.**—Four Sand Grouse were seen in a corn-field on the edge of Manshead Moor, five miles S.E. of Todmorden, about the middle of June, 1888, and all the birds (two males and two females) were shot by a man named Stocks. The place where the birds were killed is about 900 feet above sea-level. The Sand Grouse seen by James Sutcliffe (misspelt Stancliffe in Zool. 1889, p. 2) was on the open moor, 1200 feet above sea-level, the greatest elevation I have seen recorded for Sand Grouse in this country.—ROBT. J. HOWARD (Fern Bank, Blackburn).

[The wanton destruction of two pairs of these birds in the nesting season is really too bad, and it is to be hoped that the "Act for the better protection of the Sand Grouse" will be enforced, and that the shooter may be made to pay the full penalty, £4 and costs.—ED.]

**The Sand Grouse in Mecklenburg (Germany).**—In the 'Archiv des Vereins der Freunde der Naturgeschichte in Mecklenburg,' 1888, Herr C. Struck, of Waren, has a paper (pp. 175—184), "Ueber Steppen oder Faust-hühner (*Syrrhaptes paradoxus*) in Mecklenburg," in which, after referring to the earlier appearance of the bird in 1859, 1862, and 1863, he traces its occurrence at several localities in the Duchy of Mecklenburg between the dates 18th April and 6th August, 1888.

**Loxia curvirostra, var. rubrifasciata (Bonap. & Schl.), in Ireland.**—Among other Crossbills sent to me for preservation, obtained at Edenderry, King's Co., in March, was a bird remarkable for two pale reddish bars across the wings. This I forwarded to Prof. Newton, who very kindly sent me the following information, which I quote from his letter:—"I cannot remember having ever seen a Crossbill similar to the one sent; but in the wing-markings it essentially resembles the figure of the male given in pl. 5 of Bonaparte and Schlegel's 'Monographie des Loxiens,' under the name of "*Loxia curvirostra rubrifasciata*," though it does not so well agree with their description, which states that the adult male of this form has the wing-coverts tipped with reddish (*rougeâtre*), whereas in your specimen, as well as in the figure (at least in my copy) the tips are buff. Nevertheless I have little doubt your bird belongs to this form, in which the colour of the tips seems to vary from bright to dull red, and hence may occasionally be also buff. I cannot regard it as a distinct species, as has been done by C. L. Brehm, who named it ('Naumannia,' 1853, p. 194) *Crucirostra*

*rubrifasciata*,\* but I agree with Bonaparte and Schlegel in considering it a variety of the common *Loxia curvirostra*." This form, I believe, is new to Britain, and is in some respects not unlikely to be mistaken for a White-winged Crossbill.—EDWARD WILLIAMS (2, Dame Street, Dublin).

**Notes from Western Australia.**—My last letter to 'The Zoologist' was, I believe, chiefly concerning an overland trip to the southern part of this colony. I returned to this district at the end of March, 1888. During the previous summer there had been unusually heavy and welcome rains; this river (the Minilya) ran through, as did the Gascoyne, which had not done so for nearly four years. The Minilya does not empty itself into the sea, but into the vast salt marshes behind the coast sand-hills. Natives assert that in a very wet season they have seen these two rivers join by way of these marshes before any Whites were here. On a large lake-like pool formed by the overflow of the Minilya, forty miles below this, we saw great numbers of Black Swans. We counted more than four hundred on one-half of the pool. Both eggs and young of this bird have frequently been obtained here by the owner and men at the station adjoining. The so-called "Crested Partridge" mentioned in a former communication, and which I was unable to see during my first visit here, proves to be the Rust-coloured Bronze-wing Pigeon, *Lophophaps ferruginea*, a most elegant and striking bird, and on first view certainly more like a partridge than a pigeon. It may be found along this river, especially where the nature of the ground is rocky, in considerable numbers, but not in flocks. When courting, the male—with plume erect and tail-feathers widely spread out like a fan—presents a striking appearance, and is usually very fearless; in fact, I have frequently had both sexes running round me within arm's length. The eggs, two in number, are placed on pebbly, or even rugged, ground, with no sign of a nest. I have found them laid quite in the open, though sometimes a bush partially shelters them. Gould infers from this that the young of this species are able to run soon after leaving the egg. We kept two young in the house here a little time; when found they must have been upwards of a week old, and on the second day of their imprisonment they could only feebly waddle round their cage. Early in October I took a trip across to the Lyndon River, and from thence to the Lyons, nearly as far as Mount Augustus. On the latter river this bird was plentiful, and I secured some fresh eggs. The large pools of water on the Lyons abounded with aquatic birds: among them Pelicans (*Pelecanus conspicillatus*), Cormorants, White Egrets (*Herodias melanopus*?); and various Ducks—among them the Teal (*Anas punctata*), Pink-eyed Duck (*Mallacorhynchus membranaceus*), and Whistling Duck (*Dendrocygna Eytoni*).

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\* By an oversight, this word was misprinted *bifasciata* in the 4th edition of Yarrell's 'British Birds,' ii. p. 201, foot-note.

There were also great numbers of the Straw-necked Ibis, *Carphibis spinicollis*, a bird which all colonists here agree has only once been previously seen in the district. These birds I first observed last May, feeding near the stock-yards and houses; then they betook themselves more to the rivers and water-holes, though often met with in great flocks on open flats. The Gascoyne River has also been visited by great numbers of these birds. They were in a most emaciated condition on their arrival, and great numbers died. Others, however, were in better condition, or else speedily grew fat, for I found one day, on shooting three, they were quite as much as I cared to carry a quarter of a mile. Though not nearly so numerous as they were a few months ago, many still remain, but though they have been here eight months I cannot hear of their breeding. Most of the natives here regard it as a new bird. A species of Laughing Jackass (*Dacelo cervina?*) is abundant on the Lyons and Gascoyne Rivers, but curiously enough does not occur on the Minilya: I believe it is also found on the Lyndon. Emus have been wonderfully plentiful this season: these birds prolong their time of laying very much; eggs were brought in here in May, and early in December last I came upon a party of ten young ones with their parents; the former were certainly not a fortnight old. The reason may be that the first clutches of eggs are often taken by natives. Migration goes on here to a considerable extent among several species of birds, but it is difficult to make exact notes in a new country. During the months of October and November great numbers of what from Gould's description must be, I think, the Letter-winged Kite, *Elanus scriptus*, appeared here. Many died from some cause which I could not ascertain, and very few are now to be seen. When in Carnarvon, last November, I saw some young Magpies that a teamster had brought down the river with him: it was the same species as occurs in the southern portion of this colony, and I previously imagined the Murchison River to be its northern limit. It is a curious fact that many species of bush quadrupeds completely died out here some years ago; their unoccupied habitations may be seen all over the bush. The Kangaroos in this district were almost totally exterminated some years when so many natives succumbed to the "measles": they say the Kangaroos and other species contracted this disease. It is, however, certain that some species have died out entirely; others are now increasing again. Many species of birds here lay whenever a good rain falls, no matter what time of year.—THOMAS CARTER (Minilya River).

**Uncommon Birds in Skye.**—Although the Greater Spotted Wood-pecker (*D. major*) has long been known to visit the Shetlands, it has not to my knowledge been recorded from the Hebrides. I ought, perhaps, to say that it has recently occurred in Skye, on at least one occasion. In October, 1886, a male bird was shot near Edinbane, by Mr. Boyd, the

shooting tenant, when in company with Mr. M. B. Byles. I received particulars orally from both these gentlemen, and traced the specimen in the ledger of the person who mounted it. It is now in Mr. Boyd's possession in town. Among other birds which have occurred in Skye, but which I was not able to include in my list of the avifauna of that island in 1886, are the following: — Brown-headed Gull, which probably visits us on its way to breed in North Uist, where Mr. J. Mackenzie tells me he has seen it breeding; Bar-tailed Godwit, obtained in mid-winter; Chiff-chaff, first observed by myself in April, 1889; Crossbill, detected by Mr. G. S. Dumville Lees; Sand Martin, observed by myself in summer, and by Mr. Lees in autumn; Pintail, Pochard, Scaup, Scoter, Smew, and Pinkfooted Goose; Pallas's Sand Grouse; Quail; Tawny Owl obtained in several quarters; Buffon's Skua and Leach's Petrel. Incidentally, I may say that *no* Glaucous or Iceland Gulls have occurred, to my knowledge, on the Skye coast for three years, though a very sharp look-out has been kept. As the Pintail is rare in the Hebrides, it may be well to state that I myself identified the species.—H. A. MACPHERSON (Carlisle).

**Hen Skylark singing in Confinement.**—Last year I reared a Skylark (taken when six days old), and after the autumn moult it began to repeat the usual song; I then turned it into one of my smaller aviaries with a pair of *Leiothrix*; it soon got used to the size of its home and flew about freely, being rarely on the ground, and to my surprise frequently using a ledge and sometimes a branch as a perch, its long hind toe being used as a support, exactly after the manner of perching birds; at intervals, and usually when my older eaged Skylark was singing, this bird would commence the same song, which, however, terminated abruptly whenever a *Leiothrix* dashed down near to it. On June 16th I heard it singing, and, not having examined it minutely, I naturally concluded that it was a cock bird; but on the following day it laid an egg upon the grass in the aviary, and thus decided its sex beyond question. I should be glad to know whether anyone else has ever heard of a hen Skylark singing.—A. G. BUTLER (Penge Road, Beckenham).

**Congenital Blindness in Birds.**—I hope you may think the following sufficiently interesting for publication in 'The Zoologist,' of which I am always a most interested reader. While on a visit to a country rectory near Pontefract, a chicken six weeks old, of the ordinary barn-door variety, and one of a brood of a dozen or so, was pointed out to me as being almost, if not quite, blind. On examining it I found it to have double congenital cataract. Both lenses were so opaque that it could only have had the smallest possible amount of vision, if any. One could pick it up without any attempt on its part to escape, and it was quite unable to find its food, which had always to be put immediately under its bill. It was small and weakly as compared with others of the same brood. One knows that

cataract is not uncommon in dogs and cats among domestic animals, but I have not yet met with, or heard of a case, more especially of congenital cataract, in any bird.—ALLAN MACNAB (King's College Hospital).

[We remember to have met with a case of congenital cataract in a Wild Duck, and published a note on the subject at the time. See 'The Field,' Sept. 30th, 1871.—ED.].

**Hedgesparrow trying to mate with a Garden Warbler.**—One of my larger aviaries contains the following birds:—A pair of Yellowhammers, a Reed Bunting, Hedgesparrow (female), Garden Warbler (male), Meadow Pipit (male), a Grey Wagtail and a Pied Wagtail. The Yellowhammers recently built in an *Arbor vitae*, and during the progress of the building, which occupied them four or five days, I frequently noticed my Hedgesparrow following the Garden Warbler about and trying to entice him to pair with her; on one occasion I noticed her behaving in a similar manner towards the Pied Wagtail, but both birds treated her with the utmost indifference; the Meadow Pipit however strutted about in the greatest excitement, and tried in every way to make up to her, though she constantly gave a peck whenever he advanced near to her. Whether she has at last succeeded in gaining the affections of the Garden Warbler I cannot say, but she has deposited a clutch of eggs in the Yellowhammer's nest and is sitting steadily upon them, so that the evicted tenants have had to start afresh.—A. G. BUTLER (Penge Road, Beckenham).

#### FISHES.

**Motella cimbria on the Norfolk Coast.**—Mr. Arthur Patterson, of Great Yarmouth, has sent me a sketch and description of a Four-bearded Rockling, *Motella cimbria*, which he found amongst the refuse left by the drawnetters on Yarmouth Beach, on May 23rd last. Its total length was 8½ inches, and from its stomach he took a full-grown brown shrimp. I am not aware that this species has been previously observed on the Norfolk coast.—T. SOUTHWELL (Norwich).

[This fish, from the coasts of Northern Europe, must be regarded as rare around the British Isles. It was first noticed as British by Parnell, who found it in the Firth of Forth, and has been recorded from Banff, Aberdeen, St. Andrew's, Falmouth, and Penzance. We have not heard of its previous occurrence on the east coast of England. There is a good figure of it in Day's 'British Fishes' (plate 88) from a specimen eleven inches long. He states (i. p. 317) that the longest-recorded British specimen measured fourteen inches.—ED.].

#### BATRACHIA.

**Bullfrog preying on Natterjack.**—On April 27th, 1889, I visited the sand-hills near Southport, and captured about sixty Natterjacks to turn

down in my garden. These Toads are very plentiful there, and the sound of their bellowing love-calls was audible at a distance of a quarter of a mile. It would be difficult to estimate their number, but on the area we inspected there must have been tens of thousands. Of those I put in my garden some climbed a wall eight feet high and made their way to the flashes at the back, where I trust they will become localised. I placed a few in a case adjoining a case of American Bullfrogs, and noticing the latter eyeing them in a greedy way, I placed one amongst them; it was promptly devoured. I then put in some more, and one Bullfrog ate four Natterjacks in about six minutes; as the toads were full-grown, his meal was a good one. I have had some difficulty in providing food for my Bullfrogs, but find that they will eat raw meat if it be cut into strips about two inches long and then moved before them as if alive; if it be left motionless they will not touch it. It may be interesting to record that last week I noticed an Edible Frog, *Rana esculenta*, eat a full-grown *Salamandra atra*. I was the more surprised as I have bred *S. atra*, *S. maculosa*, *Molge cristata*, and *M. vulgaris* in the same case for some months without noticing anything of the kind; although the Common Newts were becoming fewer, I thought they might have escaped through the wire cover of the case, but after seeing where *S. atra* went, I have no doubt the Newts had suffered a similar fate. I feed these frogs with earthworms, and occasionally insects, upon which diet they thrive and have spawned in captivity. On May 11th I found a female *S. atra* dead on the bottom of the case. She had died in the act of parturition; the tail of the young one protruded nearly an inch; I extracted it, and found it had reached the adult form. Last June some *S. maculosa* brought forth their young in the gill state, some being born in the tank and others on the floor of the case: the latter died, the former flourished, and I have one still in the gill state, now nearly three inches long; it is just beginning to show the brilliant yellow markings of the adult. Some two weeks ago, on moving an old tree-root in my garden, I found a *Salamandrina perspicillata*, evidently one of a number which had escaped from their case last summer, and had managed in its snug retreat to survive our northern winter.—

LINNAEUS GREENING (Birch House, Warrington).

## MOLLUSCA.

Mollusca in the neighbourhood of London.—On May 16th I took a white variety of *Bulimus obscurus* from a nettle-covered bank between Hampstead Heath and Hendon. It was the only form of this species I could find, and I searched the bank well, for I knew that this snail had not hitherto been recorded for Middlesex; at any rate it is not so recorded in Taylor and Roebuck's 'Census of British Land and Freshwater Mollusca.' [It is recorded in Cooper's List.—ED.] On the very

same bank *Helix cantiana* (Mont.) and its white variety live in hundreds, I might almost say in thousands. One specimen of *Succinea putris* (Linn.) was found, a large quantity of *Arion ater* (Linn.) and Lehmann's var. *brunnea*, with *Limax agrestis* (Linn.) [chiefly belonging to Draparnaud's *sylvatica*] and *Hyalinia cellaria* (Müll.), *Helix rufescens* (Penn.), *H. rotundata* (Müll.), and *H. hispida* (Linn.). In company on the nettles with *Helix cantiana* live also *H. hortensis* (Müll.) and *H. nemoralis* (Linn.), but not in such great profusion. Of the former of these the yellow variety (Moquin-Tandon's *lutea*), with the band-formula of 00000, are the most common; there is also present the white variety with a band-formula of 12345 (Moquin-Tandon's *albida*). Of the latter, the flesh-coloured variety (Roebuck and Taylor's *carnea*) is the most common, and those of the band-formulæ of 00000, 00300, 123(45), 12345; others are also present, as the yellow variety (Risso's *libellula*), with band-formulæ of 00300, 00345, and 12345, and the tawny-coloured variety (Moquin-Tandon's *Petiveria*), with band-formulæ of 12345 and 00000.—J. W. WILLIAMS (Mitton, Stourport).

**The Basal Coloration of the Shells of *Helix hortensis* and *H. nemoralis*.**—Shell-workers have no doubt observed, as I have oftentimes done, the difference in colour from the general body colour of the basal portion of the body-whorl in these two species. Thus, in the white variety of *H. hortensis* there is generally a basal coloration of light yellow, and in the flesh-coloured variety of *H. nemoralis* (which Roebuck and Taylor have called var. *carnea*) there is generally a brownish basal coloration almost identical in colour with that forming the body-colour of the variety which Moquin-Tandon has called *castanea*. And not to mention other instances, which will occur to the reader, there is, even in the yellow form of these two species, a deeper coloration of yellow in the basal portion of the shell. These are of adult shells. But in young shells, and in those which have only recently become adult there is no difference of colour shade to be noted between the basal portion of the shell and the portion above and directly around the periphery. The basal coloration is then, I think, not congenital, but acquired, and I throw out the suggestion that it is due to the action of moisture, from the snail drawing that portion of its shell continuously over damp earth. And the ground I have for this suggestion is that I have observed the flesh-coloured variety of the shell of *H. nemoralis* become of that brownish tinge (which is found normally at its basal portion) from the unlimited action of damp in the course of two weeks. It will be remembered that the loved haunt of these snails is a nettle-covered hedge-bank, and it will be generally found that the soil in which nettles grow is of a soft, moist character.—J. W. WILLIAMS (Mitton, Stourport).

## SCIENTIFIC SOCIETIES.

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### LINNEAN SOCIETY OF LONDON.

June 6, 1889.—Mr. CARRUTHERS, F.R.S., President, in the chair.

Dr. John Anderson, Mr. J. G. Baker, Dr. Braithwaite, and Mr. F. Crisp were nominated Vice-Presidents.

Mr. Digby S. W. Nicholl was admitted a Fellow; and the following were elected:—The Marquis of Lothian, Messrs. W. Williams, C. S. Wild, and W. Schaus.

Prof. Martin Duncan exhibited under the microscope some beautifully mounted preparations of the ambulacral tentacles of *Cidaris papillata*, and drew attention to the fact, previously unrecorded, that the tentacles of the abactinal region of the test differ in form and character from those of the actinal region. The latter have a well-developed terminal disk, and are richly spiculated; whereas the former have no disk, but terminate distally in a pointed extremity with very few spiculae. Mr. W. P. Sladen made some remarks on the significance of this dimorphism with reference to its archaic character, and its relation to the primitive forms of Echinoids and Asteroids.

Mr. Narracott exhibited a singular fasciated growth of *Ranunculus acris*, found at Castlebar Hill, Ealing.

Mr. H. B. Hewetson exhibited under the microscope a parasite of Pallas's Sand Grouse, *Syrrhaptes paradoxus*, taken from a bird shot in Yorkshire, and described as a species of *Argas*. Mr. Harting pointed out that an apparently different parasite, from the same species of bird, had been recently described by Mr. Pickard Cambridge (Ann. & Mag. Nat. Hist., May, 1889), under the name *Hemaphysalis peregrinus*.

Dr. Cogswell showed some examples of Jerusalem artichoke and potatoe, to illustrate the spiral development of the shoots from right to left.

Governor Moloney, C.M.G., of the colony of Lagos, exhibited a large collection of birds and insects from the Gambia, the result of twelve months' collecting in 1884-85. The birds, belonging to 134 species, had been examined and named by Capt. Shelley. Amongst the beetles, of which 89 species had been collected, he called attention specially to *Galerita africana* and *Tefflus megelii*, and to the Rhinoceros and Stag-horned beetles. Of butterflies there were 90 species, amongst which the most noticeable and characteristic were the *Acreas* and the pale green *Eronia thalassina*, said to be typically Gambian. The moths, of which some 220 species had been brought home, were named by Mr. Herbert Druce, and several had proved to be new or undescribed. A portion of this collection had been exhibited at the Indian and Colonial Exhibition of 1886, but had since been carefully

gone over and named, and was now exhibited for the first time in its entirety. Mr. Herbert Druce alluded to some of the Lepidoptera which are most characteristic of the Gambia region; and Mr. Harting made some remarks upon the birds, pointing out the wide geographical range of some of the species which had been collected.

Mr. Clement Reid exhibited several specimens of fossil plants from a newly-discovered Pleistocene Deposit at South Cross, South Elmham, near Harleston.

Mr. D. Morris exhibited specimens of the fruit of *Sideroxylon dulcificum*, the so-called "miraculous berry" of West Africa, belonging to the *Sapotaceæ*. Covered externally with a soft sweet pulp, it imparts to the palate a sensation which renders it possible to partake of sour substances, and even of tartaric acid, lime-juice, and vinegar, and to give them a flavour of absolute sweetness. The fruit of *Thaumatococcus*, *Phryníum Danielli*, possessing similar properties, was also shown, and living plants of both had lately been received at Kew from Lagos, through Governor Moloney.

Mr. Thomas Christy exhibited living plants of *Antiaris toxicaria* (the Upas-tree) and *Strophanthus Kombe*, both of them poisonous, to show the similarity of the foliage.

On behalf of Dr. Buchanan White, a paper was then read by Mr. B. D. Jackson, entitled a "Revision of the British Willows."

The meeting adjourned to June 20th.

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#### ZOOLOGICAL SOCIETY OF LONDON.

May 21, 1889.—Prof. FLOWER, C.B., LL.D., F.R.S., President, in the chair.

Mr. Sclater exhibited and made remarks on a mummied Falcon (probably a Kestrel) from a tomb at Thebes, procured by Mr. A. G. Scott; and some photographs of groups of Sea-birds and Seals taken on the shores of Antipodes Island, Antarctic Ocean.

Mr. Sclater also called attention to a specimen of a Leaf-insect living in the Society's Insect House, which had been received from the Seychelles, and presented by Lord Walsingham. It was not quite fully developed, but was believed to be referable to *Phyllium gelonus*, Gray.

Mr. Martin Jacoby read a list of the species of Coleoptera of the families *Crioceridae*, *Chrysomelidae*, and *Galerucidae*, of which specimens had been collected in Venezuela by M. Simon, and gave descriptions of the new species.

A communication was read from Mr. A. G. Butler, containing the description of a new extinct genus of Moths belonging to the Geometrid family *Euschemidae*, based on a fossil specimen obtained from the Eocene

Freshwater Limestone of Gurnet Bay, Isle of Wight. This insect was named *Lithopsyche antiqua*.

Mr. W. F. Kirby read a paper containing descriptions of new genera and species of Dragonflies, chiefly from Africa, in the collection of the British Museum.

Dr. Hans Gadow read a paper on the taxonomic value of the intestinal convolutions in birds. After pointing out the different forms assumed by the intestinal convolutions in this class of animals, and suggesting a nomenclature for them, the author proceeded to give the outlines of a classification of birds based solely on this part of their structure, and to show the differences and resemblances of the various groups.

June 4, 1889.—OSBERT SALVIN, F.R.S., Vice-President, in the chair.

The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of May.

Mr. H. E. Dresser exhibited and made remarks on some eggs of the Adriatic Black-headed Gull, *Larus melanocephalus*, and of the Slender-billed Gull, *Larus gelastes*, which had lately been obtained at their nesting-places in the marshes of Andalucia by Col. Hanbury Barclay and himself.

Dr. G. J. Romanes read a paper on the intelligence of the Chimpanzee, as shown in the course of experiments made with the female Chimpanzee called "Sally," which has been living several years in the Society's Menagerie.

A communication was read from Signor F. S. Monticelli, containing notes on some Entozoa in the Collection of the British Museum.

Mr. Sclater read a list of the birds collected by Mr. George A. Ramage (the collector employed by the joint Committee of the Royal Society and the British Association for the exploration of the Lesser Antilles) in Dominica, West Indies, and made remarks upon some of the species.—P. L. SCLATER, *Secretary*.

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#### ENTOMOLOGICAL SOCIETY OF LONDON.

June 5, 1889.—The Right Hon. Lord WALSINGHAM, M.A., F.R.S., President, in the chair.

Mr. W. M. Christy, of Watergate, Emsworth, was elected a Fellow of the Society.

Mr. S. Stevens exhibited a specimen of *Aerolepia assectella*, Zeller, included in a lot of *Tineidæ* purchased by him at the sale of the late Mr. A. F. Sheppard's collection, and determined by Mr. Stainton. He also exhibited, for comparison, a specimen of *A. betuletella*.

Mr. J. J. Walker, R.N., exhibited a collection of Lepidoptera made in 1887 and 1888 in the immediate vicinity of the Straits of Gibraltar. The collection included sixty-eight species of butterflies, of which thirty-six were

obtained on the Rock of Gibraltar itself, and the remainder on the European side of the Straits, and about 160 species of moths.

Dr. P. B. Mason exhibited a number of specimens of a South-European species of Ant—*Crematogaster scutellaris*, Oliv. He said that the specimens were all taken in the fernery of Mr. Baxter, of Burton-on-Trent, and had probably been imported with cork.

Mr. O. E. Janson exhibited a pair of *Neptunides stanleyi*, a species of *Cetoniidae*, recently received from Central Africa, and described by him in the February number of 'The Entomologist'; also some varieties of *N. polychrous*, Thoms., from the Zanzibar district.

Dr. N. Manders exhibited a number of Lepidoptera collected by himself in the Shan States, Upper Burmah; also a collection of Lepidoptera made by Captain Raikes in Kárenni.

Mr. M'Lachlan exhibited over 400 specimens of Neuroptera, being a portion of the collection formed in Japan by Mr. H. J. S. Pryer. They represented nearly all groups (excepting *Odonata*, now in the hands of Baron De Selys). Some of the *Ascalaphidae*, *Panorpidae*, and especially *Trichoptera*, were of great beauty; notably amongst the latter was the curious moth-like genus *Perissoneura*, M'Lach.

Dr. Sharp exhibited the peculiar cocoons of an Indian moth, *Rhodia newara*, Moore; these were the cocoons possessing a drain at the bottom in order to allow water to escape, already described in the 'Proceedings of the Zoological Society' for 1888, p. 120, where, however, their great resemblance to the pods of a plant had not been alluded to.

Mr. Enock exhibited, and made remarks on, specimens of *Cecidomyia destructor*, bred from American wheat.

Mr. W. Warren exhibited a bred specimen of *Retinia posticana*, Zett., from Newmarket; also specimens of *Eupithecia jasioneata* and *Gelechia confinis*, bred by Mr. Gardner, of Hartlepool.

Mr. C. O. Waterhouse exhibited and explained a number of diagrams illustrative of the external characters of the eyes of insects. A discussion ensued, in which Mr. M'Lachlan, Mr. Verrall, Lord Walsingham, Mr. Jacoby, Mr. Kirby, and others took part.

Mr. A. G. Butler communicated a paper entitled "Descriptions of some new Lepidoptera-Heterocera in the collection of the Honble. Walter de Rothschild." He also contributed a second paper entitled "Synonymic Notes on the Moths of the earlier genera of Noctuites."

Dr. Sharp read a paper entitled "An Account of Prof. Plateau's Experiments on the Vision of Insects." Lord Walsingham, Mr. Jacoby, Mr. White, and Mr. Waterhouse took part in the discussion which ensued.—*H. Goss, Hon. Secretary.*

## NOTICES OF NEW BOOKS.

*Bird-Life of the Borders: Records of Wild Sport and Natural History by Moorland and Sea.* By ABEL CHAPMAN. 8vo, pp. 286. With numerous illustrations. London : Gurney and Jackson. 1889.

If we have delayed until now to notice this very pleasantly written volume, it has been from no want of appreciation of its merits. It is the sort of book of which we should like to see a good many more; not a compilation from the works of other writers on birds, but written from the author's personal experience of the border moorlands, with which as a sportsman and a naturalist he is evidently well acquainted.

It has been our good fortune to spend a fortnight in May on a Northumbrian moor, and, after three seasons' Grouse shooting upon another moor in the same county, we are able (though with far less experience than our author) to testify to the fidelity of his descriptions of the haunts and habits of moorland birds.

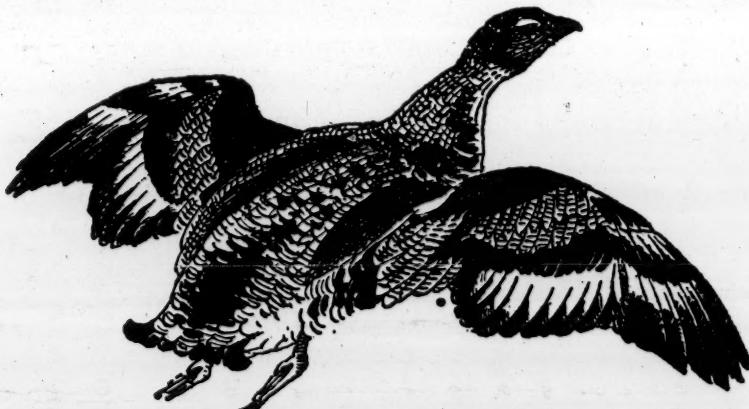
In pursuit of Grouse, Plover, and Snipe we have shot over various moors in England, Wales, Scotland, and Ireland, with "all sorts and conditions of men," and have been struck with the want of acquaintance which many display with any birds but those which are the immediate object of pursuit. It seemed to us that some of them have made little use of their opportunities, and have failed to realize more than half the pleasure of a moorland walk. We can well believe that such a walk in company with Mr. Chapman would be a very different matter, and we shall be much mistaken if those who go northwards in August with gun and rod do not thank him for the instruction they will derive from a perusal of his book.

Nor will it be of interest only to those to whom such scenes are unfamiliar. Experienced sportsmen may borrow useful hints from the author's narrative of success and failure, and will find in his descriptions many a reflection of their own experience.

As a specimen of Mr. Chapman's style (though to readers of 'The Ibis' it must be already well known) we give a couple of extracts from the volume before us,—one relating to a "game bird," the other to a "wildfowl."

Here is a description of the English haunts of the Black Grouse, *Tetrao tetrix* :—

“ Whilst in August one’s eye rests day after day upon an almost unvarying, unbroken sea of purple heather, glorious in its fullest bloom, with its golden pollen streaming away in a little cloud to leeward of the course of dog and man ; now our sport, in search of Black-game, lies amidst widely different scenes, no less wild and hardly less beautiful. Stretches of rolling prairie-land, of rough grass, rush, and bracken, interspersed here and there with straggling patches of natural birch and hazel, take the place of the heather ; and instead of wide-spreading moors, one now rambles along tortuous little cleughs, shaggy with lichen-covered birch and rowan-tree, or up the rugged course of a steep-sided rocky glen, the favourite haunt of young “ grey,” and many of which are amongst the most exquisitely wild and charming nooks ever carved out by Nature. In these sequestered spots, as a September sun shines brightly through the scattered birches, upon the masses of bracken and variegated foliage below, amongst which the setters are bustling about, their russet coats in sharp contrast with the dark rushes and paler fern, surely one has as fair a scene as eye need wish to rest on.

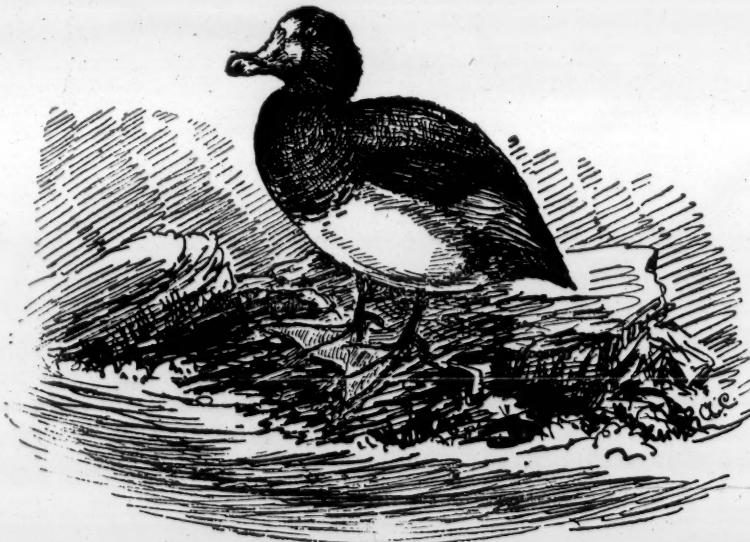


YOUNG BLACKCOCK. September 1.

“ Young Black-game are among the slowest of game-birds in attaining maturity. They are hatched early in June, but cannot be considered full-grown till the end of September, and during their four months of adolescence are certainly the “ softest ” and most tender of all the game-birds—a curious contrast with their strong and hardy nature when adult. Even when half-grown it is quite common to see a young Blackcock, if put up two or three times on a wet day, become so draggled and exhausted as to be unable to rise again.

“ The habits of young Black-game are precisely analogous with their tardy bodily development. All through their protracted adoles-

cence, and during August and September, they are the very tamest of birds. Then all at once they appear to gain a sudden accession of strength and wildness ; their timid skulking nature is discarded along with the weak, little, pointed, ruddy tails of their nestling plumage, and in a few weeks, even days, the young Blackcock, from being the tamest, becomes the wildest, of all our game-birds. \* \* \* By the middle of September the young Blackcocks are nearly full-grown, and about three parts black, with spreading tails. At that period they separate themselves from the young Grey-hens of the brood, and for a time become quite solitary. Being then scattered singly over a wide extent of rough country, they are less easy to find than to get at, for, though nearly full-sized, they lie extremely close in beds of bracken and rushes, or in the "white grass" or patches of heather. Towards dusk they begin to feed on the seeds of rushes, especially the "spratt" or flowering rush, and being then temporarily gathered together, are much wilder than during the day. They continue "on feed" till it is quite dark.



YOUNG MALE SCAUP. November.

"This (mid-September) is the season when young Black-game afford by far the finest sport over dogs ; for though they lie close, and offer easy shots, they require a great deal of hunting for ; and a bag of perhaps eight or ten brace of well-grown handsome young birds, varied by a few brace of moor-partridge, and an odd Grouse or two picked up on the outskirts of the heather, is a very satisfactory day's work."

The haunts of the Scaup, *Fuligula marila*, are thus described :—

"The favourite feeding-grounds of the Scaup is over rocks where

seaweed grows luxuriantly, and where they dive among the long waving tangles in search of the various shell-fish and their spawn, and the host of minute forms of marine life which abound in such places. Owing to this preference, their company is often confined all through the winter to certain localities,—usually about the harbour entrance, or a rocky bay adjoining the open sea ; hence they are less frequently met with than the Golden-eyes, which are scattered in odd pairs all over the sandy channels of the estuary. Moreover, such places as alluded to are not very accessible to punts ; the water is too deep, and the long inward roll of the sea, even when smooth, is dangerous for these low-sided craft, to say nothing of the difficulty of using a big gun, when one moment half the fore-deck is buried in a great oily, sloping swell, and the next the gun points heavenwards, far over the heads of the fowl. I have taken a punt, in broad daylight, within forty yards of nice packs of Scaup in such situations, but never could work a shot to advantage for the above reasons.

“ Besides the places where, as above indicated, the main bodies of the resident Scaup Ducks take up their winter-quarters, one frequently meets with small bunches of half-a-dozen or so inside harbour, especially about the “ scaps,” or mussel-beds (whence probably their name), and even on the edge of the ooze, where they occasionally vary their shell-fish diet with a feed of sea-grass. They always, however, keep afloat, or nearly so : it is very seldom one sees a Scaup or Golden-eye go on to dry land, nor (on the coast) have I ever heard either species utter a note.

“ Scaup are the tamest of all the Duck tribe, and—exactly the reverse of the Golden-eye—they continue throughout the winter as tame and as easily approached as when they first arrive in October. On seeing a pack of them, one can shove the punt close in upon them, and then, if scattered, can wait securely till they arrange themselves nicely to receive the charge. Scaup are also among the toughest of birds, and the most tenacious of life. At least half the cripples usually escape, and any that are captured alive it is all but impossible to kill. I have seen, when the bag was emptied on to the kitchen floor, a couple of Scaups, which had appeared as dead as door-nails, return to life and flutter vigorously round the room. Even when killed, however, they are of no value, being the strongest, nastiest, and most utterly uneatable Ducks I ever tried.”

We are indebted to the publishers, Messrs Gurney and Jackson, for the reproduction of two of Mr. Chapman's illustrations, selecting those which illustrate phases of plumage not figured and hardly noticed by previous writers on British Birds.

